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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,618	09/20/2005	Masahiro Sasagawa	1806.1009	8148

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EXAMINER	
CHANG, VICTOR S	

ART UNIT	PAPER NUMBER
1783	

MAIL DATE	DELIVERY MODE
09/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,618	SASAGAWA ET AL.	
	Examiner	Art Unit	
	VICTOR S. CHANG	1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2010 and 29 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-15* is/are pending in the application.

4a) Of the above claim(s) *9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,8 and 11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions, filed on 2/26/2010 and 1/29/2010, have been entered. Claim 6 has been cancelled. Claims 1-5, 7, 8 and 11-15 are active.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. In response to the amendments, the grounds of rejection have been updated as set forth below. Rejections not maintained are withdrawn.

Rejections Based on Prior Art

4. Claims 1, 3-5 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holden et al. (US 3265765) in view of Hawkins et al. (US 3935176).

Holden's invention relates to elastomeric block copolymers of monovinyl aromatic hydrocarbons and conjugated dienes. In one embodiment, the block copolymers have a general formula A-C-A, wherein A is non-elastomeric polymer block, and C is an elastomeric polymer block containing an average of 10-40 w% block A monomer (a copolymer block). See col. 2, ll. 63 through col. 3, ll. 9. The elastomeric mid section can be a polymer block of any synthetic

elastomer, such as styrene-butadiene copolymer (copolymer block S), etc. See col. 4, ll. 32-35. The non-elastomeric block may comprise homopolymer (homopolymer block H), such as polystyrene, etc. See col. 4, ll. 37-39. The C block in A-C-A is a tapered copolymer block. See col. 6, ll. 63-64. The elastomeric block copolymers may be used to form varieties of products, including foam. See col. 7, ll. 56-60.

For claims 1, 4, 5 and 14, styrene reads on the vinyl aromatic monomer, butadiene reads on conjugated diene monomer. Holden is silent about 1) hydrogenating the elastomeric block copolymer, and the vinyl bond content of the styrene-butadiene copolymer (copolymer block S), prior to hydrogenation, and 2) the specific gravity (density) of the foam. However, regarding 1), Hawkins' invention relates a hydrogenated random copolymer of a conjugated diene and vinyl aromatic compound. Hawkins teaches that variations in the vinyl content of the conjugated diene portion of the unhydrogenated copolymer affect the tensile strength. There is a steady decrease in tensile strength as vinyl content is increased. By adjustment of degree of hydrogenation (i.e. varying mole % saturation), the percent vinyl aromatic content and the vinyl content of the conjugated diene portion, a wide variety of properties in the final material may be obtained. Fig. 1 illustrates that the desired properties are obtained by adjusting the monomer ratios and vinyl bond content, i.e., these are result-effective variables for desired properties for various end uses. It would have been an obvious routine optimization to one of ordinary skill in the art to modify Holden's block copolymer according to Hawkins' teachings, i.e., hydrogenating the elastomeric block of workable amount of vinyl bond content, motivated by the desire to obtain improved properties. Regarding 2), since Holden teaches that the block copolymers may be used to form variety of products, the examiner takes Official notice that it is common and well

known that elastomeric foam is useful for cushioning products, and the foam density (specific gravity) is result effective to the cushioning properties, a workable density is deemed to be an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to provide required cushioning properties for the same end uses as the claimed invention. Finally, regarding the component (B), since it is optional (0 part by weight), it is not a required limitation by the prior art, therefore it has not been given a patentable weight.

For claim 3, the absence of a crystallization peak to hydrogenated random styrene butadiene copolymer is deemed to be an inherent property to the same chemistry of a random copolymer composition.

For claims 13 and 15, since the collective teachings of prior art render the general composition of the claimed invention obvious, and useful for variety applications including elastomeric foam, a workable impact resilience is deemed to be an obvious routine optimization to one of ordinary skill in the art, motivated by the desire to provide required properties for the same end uses as the claimed invention. Finally, elastomeric foam is inherently a shock absorber.

5. Claims 2, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holden et al. (US 3265765) in view of Hawkins et al. (US 3935176) and Karande et al. (WO 02/068529).

The teachings of prior art are again relied upon as set forth above.

For claim 2, prior art lacks a teaching of a blend of elastomeric block copolymer with olefin polymer. However, Karande's invention relates to an article prepared from a blend comprising 0 to 50 wt% of hydrogenated random styrene butadiene copolymer (copolymer block

S). See pp. 3. Foamed articles are used for various cushions, etc. See pp. 11. The blend comprises from 30 to 95 wt% of propylene copolymer, such as ethylene propylene copolymer (rubbery olefin polymer), for an improved impact resistance. See pp. 3 and 8. It would have been obvious to one of ordinary skill in the art to similarly modify the hydrogenated elastomeric block copolymer, which is rendered obvious by prior art as set forth above, by blending with the ethylene propylene copolymer, motivated by the desire to obtain improved impact resistance.

For claims 11 and 12, Karande discloses that the blend may include styrenic block copolymers, such as styrene-butadiene-styrene, etc., in an amount up to 50 wt%. See pp. 3 and 9.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holden et al. (US 3265765) in view of Hawkins et al. (US 3935176) and Shibata et al. (US 5191024).

The teachings of prior art are again relied upon as set forth above.

For claims 7 and 8, prior art is silent about a hydrogenated styrene butadiene copolymer bonded to a modifier having an amine functional group. However, Shibata's invention relates to a modified hydrogenated diene block copolymer having excellent processability and weather resistance, impact resistance and flexibility, etc. See col. 1, ll. 5-13. The modified block of alkenyl (vinyl) aromatic compound-conjugated diene copolymer has at least one functional group selected from the group consisting of acid anhydride group, carboxyl group, hydroxyl group, amino group. See col. 2, ll. 2-26. It would have been obvious to one of ordinary skill in the art to modify the block copolymers, which were rendered obvious as set forth above, with a modified hydrogenated styrene butadiene copolymer with an amino group of Shibata, motivated by the desire to obtain various improved properties.

Response to Arguments

7. In view of the new grounds of rejections set forth above, applicants' arguments in the Remarks submitted 1/29/2010 are moot.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 6:00 am - 4:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1783